

## **REMARKS**

### **Status of Claims**

Claims 1 – 11 and 13 – 28 were pending. Claims 14 – 26 and 28 have been withdrawn. Withdrawn claims 14 – 26 have been cancelled without prejudice to reclaiming the subject matter therein in this or a subsequent application. Claims 1 – 11, 13, and 27 have been rejected. Claims 1, 3, 5 – 11, 13, and 27 have been amended. Claims 29 – 33 have been newly added. Claims 1 – 11, 13, and 27 – 33 will be pending upon entry of this amendment.

No new matter has been introduced. The amendments to the claims relate to matters of form, or have been made to correct typographical errors. Claim 29 is supported at least by original claim 3 and page 13, lines 5 – 8 of the specification. Claim 30 is supported at least by page 5, lines 18 – 21 of the specification. Claim 31 is supported at least by page 20, line 20 to page 22, line 7 of the specification. Claim 32 is supported at least by page 8, lines 16 – 20 of the specification. Claim 33 is supported at least by original claims 1, 3, 7, and 12, and page 13, lines 5 – 8 of the specification.

### **Restriction/Election**

Applicants note that in the Non-Final Rejection of July 25, 2007, the Examiner stated that the species election requirement regarding invention 1 was withdrawn. Therefore, Applicants ask why claim 28 has been withdrawn.

Reconsideration is respectfully requested.

### ***Claim Rejections – 35 U.S.C. § 103***

The Examiner has made the following rejections of claims 1 – 11 and 13 under 35 U.S.C. § 103(a):

#### **First 35 U.S.C. § 103(a) Rejection**

The Examiner has rejected claims 1 – 11 and 13 under 35 U.S.C. § 103(a) as being unpatentable over Llanos *et al.*, United States Patent Application Publication No. 2002/0094440 (Llanos), in view of Carpenter *et al.*, United States Patent Application Publication No. 2004/0170685 (Carpenter).

Second 35 U.S.C. § 103(a) Rejection

The Examiner has rejected claims 1 – 11 and 13 under 35 U.S.C. § 103(a) as being unpatentable over Katsarava *et al.*, United States Patent No. 6,703,040 (Katsarava) in view of Llanos and Carpenter.

The Examiner's Contentions

The Examiner has stated that Llanos teaches coating medical devices, such as stents, with fluoropolymers, and specifically with poly(vinylidene fluoride-co-hexafluoropropene). In addition, it is the Examiner's position that Llanos teaches binding of therapeutic agents to polymers, and the inclusion of therapeutic agents such as rapamycin in such a stent coating. The Examiner admits that Llanos does not teach conjugating a bioactive agent to a biobeneficial polymer, and then cites Carpenter for such a disclosure. According to the Examiner, Carpenter discloses poly(ester amide) polymers including the polymer of claim 11, and also specifically discloses conjugating therapeutic agents to such polymers. Thus, it is the Examiner's view that Applicants' claim 1 is obvious as one would have used the poly(ester amide) polymer with conjugated therapeutic agent of Carpenter along with the fluorinated polymers of Llanos in a coating for a medical device. The Examiner's proffered rationale for such a combination is that both Llanos and Carpenter deal with medical device coatings that include rapamycin, and furthermore, that Carpenter discloses the use of multiple coating layers "... for sustained release of active agent over a period of time."

With respect to the polymer of claim 9, the Examiner admits that Carpenter does not expressly disclose a poly(ester amide) polymer with the Q moieties of claim 9. However, it is the Examiner's position that the disclosure of the use of a poly(ethylene glycol) linker with the polymer of formula (VI) of Carpenter "... results in the claimed polymer of claim 9."

The Examiner has also rejected the claims over the combination of Katsarava, Carpenter, and Llanos. According to the Examiner, Katsarava discloses combinations of poly(ester amide) polymers for use as a medical article, or use with medical articles, including as coatings on devices. The Examiner admits that Katsarava neither discloses the specific "... linking groups of claims 9 and 11," nor the use of fluorinated polymers. To fill these gaps, the Examiner again

turns to Llanos and Carpenter, concluding that it would have been obvious to have modified the polymer of Katsarava with that of Carpenter because Carpenter teaches the benefits of conjugating a therapeutic agent to a polymer. Moreover, it is the Examiner's conclusion that one would have also combined this modified polymer with a fluoropolymer for use in a coating for a medical device because Llanos teaches that fluoropolymers provide an inert surface.

#### Applicants' Response

Without concurring in the Examiner's analysis, Applicants have nevertheless amended claim 1. As amended, claim 1 no longer recites that the fluoropolymers is selected from the following group:

- (i) products of polymerization of fluorinated olefins;
- (ii) fluorine-containing cyclic polymers having a main chain with an asymmetrical cyclic structure selected from a group of polymers of repeating units of cyclically polymerized perfluorallyl vinyl ether, perfluorobutenyl vinyl ether, and a combination thereof; and
- (iii) copolymers of perfluoro-2,2-dimethyl-1,3-dioxole with perfluoroolefins or with perfluoro(alkyl vinyl) ethers.

Applicants traverse.

First, one of skill in the art, upon reading the references, would not have been motivated to have combined the teachings of Llanos with the teachings of Carpenter and/or Katsarava. Llanos repeatedly refers to coatings of fluoropolymers, and emphasizes the advantage of an "inert" surface. With respect to combinations of polymers, in paragraph [0036] Llanos refers to blends or combinations of fluoropolymers. Although Llanos in paragraph [0033] refers to blending hydrophobic or hydrophilic polymers with the fluoropolymer to modulate release, this disclosure would not suggest adding a poly(ester amide) with a bioactive covalently attached to it. In response to Applicants' remarks, the Examiner has cited paragraph [0027] of Llanos for the purported disclosure that Llanos discloses the use of fluoropolymers in combination with bioabsorbable polyesters in medical device coatings. However, the Examiner has misread paragraph [0027]. The polymers mentioned in paragraph [0027] are polymers or materials suitable for the stent substrate.

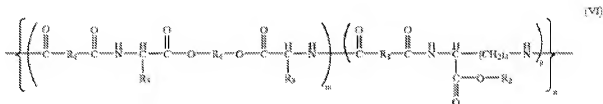
Further, neither of the other two references, Carpenter and Katsarava, specifically discloses the use of fluoropolymers. In an embodiment, Carpenter discloses a specific combination of layers. The poly(ester amide) polymers are specifically mentioned as a potential polymer of the middle “diffusion barrier” layer, or part of the inner layer. The middle layer of Carpenter is actually a layer of a sheath covering the stent, and is intended to direct bioactive agents and/or additional bioactive agents included in the outer layer of the sheath to the tissue, and to prevent their diffusion to the inner layer. The inner layer surrounds the stent struts and includes a bioabsorbable polymer with a bioactive agent, but not “an additional bioactive agent.” There is no material covering the luminal side of the “inner layer” which is in direct contact with the fluid in the lumen. The bioactive agent enhances endothelialization, and is released when the polymer biodegrades. The Examiner has not provided any explanation of why one would have combined the fluoropolymers of Llanos with the poly(ester amide) of Carpenter to form a coating given that Carpenter discloses a particular arrangement of layers. Also, Carpenter specifies having a bioactive agent covalently bound to the poly(ester amide) so it is unclear how the addition of a fluoropolymer would impact the release of this bioactive agent. Additionally, if the alternative embodiment in Carpenter, in which there is a surface coating of a bioabsorbable polymer with a covalently bound bioactive agent, were to have been used, the surface coating presumably would cover the fluoropolymers. Thus the reason for using the fluoropolymer, its inert surface, would not be applicable to such a configuration.

Katsarava discloses a specific combination of poly(ester amide) polymers that provide sufficient plasticity, a lack of self-adhesion, as well as ability to immobilize enzymes. Katsarava also expressly discloses that other polymers or materials may be combined with these polymers, but only “. . . so long as the resultant blend still exhibits the properties described above.” (Katsarava, col. 6, lines 13 – 15) Again, given this disclosure in Katsarava in conjunction with the disclosure of the advantage of the “inert” surface in Llanos, the Examiner has not explained what would have motivated one to have combined these polymers in one coating as it appears that the advantages of the individual polymers would be lost when combined.

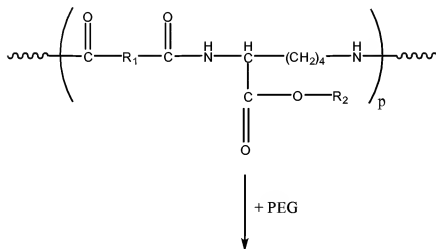
In summary, it is only with the use of Applicants’ specification as a template that the Examiner has come to the conclusion that one would combine the teachings of these references. It is clear that the Examiner is relying upon hindsight. Therefore, claim 1, and those claims

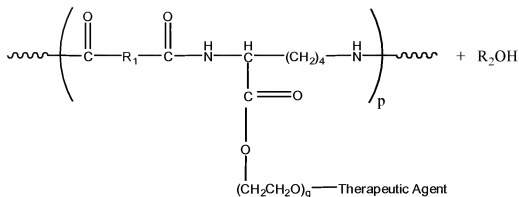
which depend from claim 1, are not rendered obvious by Llanos, Carpenter, and Katsarava, either individually, or in combination.

Second, with respect to claim 9, the Examiner's interpretation is incorrect. The use of a poly(ethylene glycol) compound as a means of linking a therapeutic agent to the polymer of formula (VI) of Carpenter would not yield the polymer of Applicants' claim 9. For the purposes of discussion, Applicants have reproduced formula (VI) below:



As the Examiner noted, the formula includes moieties equivalent to the "M" and "P" of the polymer recited in claim 9. It is the Examiner's position that the above polymer of formula (VI) with a poly(ethylene glycol) (PEG) molecule linking agent attached to it would read on the polymer of claim 9, if m and/or n of claim 9 were 1. Applicants assume that the PEG would be linked to the polymer via the second part as follows:





Applicants fail to see how the above would read on the polymer of claim 9, even if both m and n were 1. In particular, Applicants do not see any "Z" group which forms part of all of the four Q groups which would read on the  $-(CH_2)_4-$  part of the above compound. In summary, the polymers disclosed in Carpenter, even if modified by the inclusion of the poly(ethylene glycol) linking group, do not read on the polymers of Applicants' claim 9.

Third 35 U.S.C. § 103(a) Rejection

The Examiner has rejected claim 27 under 35 U.S.C. § 103(a) as being unpatentable over Llanos, in view of Carpenter, and further in view of Smith *et al.*, United States Patent No. 6,451,337 (Smith).

### The Examiner's Contentions

The Examiner has cited Smith for the alleged disclosure of a coating for medical devices including “polymeric conjugates of diazenium diolates.” According to the Examiner one would have included the diazenium diolate polymer conjugate for the rapamycin in the Llanos/ Carpenter combination.

### Applicants' Response

Even if Smith discloses “polymeric conjugates of diazenium diolates” as the Examiner has asserted, Smith does not cure the deficiency of Llanos and Carpenter with respect to claim 1. Therefore, claim 1 and also claim 27, which depends from claim 1, are not rendered obvious by Llanos, Carpenter, and Smith.

***Rejoinder***

Applicants respectfully submit that the pending claims are in condition for allowance. The Manual of Patent Examining Procedure, 8<sup>th</sup> Edition, § 821.04 recites the following:

The propriety of a restriction requirement should be reconsidered when all the claims directed to the elected invention are in condition for allowance, and the nonelected invention(s) should be considered for rejoinder. Rejoinder involves withdrawal of a restriction requirement between an allowable elected invention and a nonelected invention and examination of the formerly nonelected invention on the merits.

In order to be eligible for rejoinder, a claim to a nonelected invention must depend from or otherwise require all the limitations of an allowable claim.

Claim 28 depends from claim 1. Therefore, with respect to withdrawn claim 28, Applicants respectfully request that the Examiner rejoin this claim, and subsequently examine this claim on the merits. Applicants again point out that the election of species with respect to invention I was withdrawn.

***Patentability of New Claims***

New claims 29 – 32 depend from claim 1, and are therefore patentable for at least the same reasons that claim 1 is patentable.

New claim 33 contains all of the limitations of claim 1, and is therefore patentable for at least the same reasons that claim 1 is patentable.

**Conclusion**

In light of the foregoing claim amendments and remarks, this application is considered to be in condition for allowance. Applicants respectfully request the allowance of pending claims 1 – 11, 13, 27, and 29 – 33, and rejoinder and examination on the merits of claim 28.

If necessary to ensure a timely response, this paper should be considered as a petition for an Extension of Time sufficient to provide a timely response. The undersigned authorizes the Commissioner to charge any fees that may be required, or credit any overpayment to be made, to the **Squire, Sanders, and Dempsey Deposit Account No. 07-1850**.

Should the Examiner have any questions regarding this communication, the Examiner is invited to contact the undersigned at the telephone number shown below.

Respectfully submitted,

Dated: August 20, 2010  
Squire, Sanders & Dempsey L.L.P.  
One Maritime Plaza, Suite 300  
San Francisco, CA 94111-3492  
Telephone (415) 954-0397 (direct)  
Telephone (415) 954-0200  
Facsimile (415) 393-9887

By /Gloria M. Gusler, Reg. No. 50,282/  
Gloria M. Gusler, Ph.D.  
Attorney for Applicants  
Reg. No. 50,282